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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/211,718	12/14/1998	ERIC R. FOSSUM	08305/015001	9540

7590 01/20/2004

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EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

09/211,718

Applicant(s)

FOSSUM ET AL.

Examiner

Brian C Genco

Art Unit

2615

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 31 December 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.  
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.  
2. ☐ The proposed amendment(s) will not be entered because:  
(a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ they raise the issue of new matter (see Note below);  
(c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Attached Pages.  
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.  
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:


Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1-13,17 and 18.

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.  
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.  
10. ☒ Other: See Continuation Sheet

  
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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

Continuation of 10. Other: The amendment to claim 13 will be rejected using the same references used in the previous rejection of claim 14, which is canceled..

Applicant's amendment filed December 31, 2003 has been fully considered by the Examiner but is not deemed persuasive.

Applicant's traversal has overcome the 35 U.S.C. 112, second paragraph rejection of claim 1.

Examiner directs Applicant to the last paragraph of page 10 of Applicant's response. Examiner notes that the sentence providing the motivation for combining the Thevenin reference does not end where Applicant indicated. Conversely, as seen on page 9, lines 2-6 of Examiner's Final Rejection, Paper No. 18, the motivational statement is ended with a quote from Thevenin's disclosure.

Applicant argues that there is an illogical jump from x-rays to the CMOS image sensor of the instant invention.

In response, Examiner notes that it is well known in the art to use CMOS image sensors for x-ray imaging. Examiner further notes that while the prior art references all deal with x-ray imaging, they meet the structural limitations of the claims. Examiner further notes that the Thevenin reference is used merely as further teaching of the exposure monitoring taught in the Spivey reference. The Thevenin reference in no way detracts from the structural teachings of the Spivey and Sayag references, it merely provides further support for the combination.

Applicant argues that the previous office action looks to Sayag to teach a pixel interpolator between the first and second portions of the image sensor portion and the fourth edge of the image sensor substrate.

In response, Examiner notes that the Heller reference was used to teach this limitation.

Applicant argues that since the Sayag register is photosensitive it obviates the need for an interpolator.

In response, Examiner notes that while the register disclosed by Sayag is photosensitive, Sayag still teaches on column 7, lines 4-8 that the signals need to be corrected so as to match the other pixels. As discussed in the previous office action, this is a form of interpolation and as such the Sayag reference directly teaches the need for an interpolator.

Applicant argues that it was improperly concluded that it would have been obvious to place the pixel interpolator between the image area and the fourth edge so as to enable butting and the creation of a large format array as taught by Spivey.

In response, Examiner notes that Spivey discloses control circuitry located between the image area and the fourth edge as shown in Fig. 15A and further discloses alternative embodiments where additional circuitry could be added on that section of the chip (column 24, lines 3-5). Therefore as discussed in the previous office action, in order to maintain the chip as buttable any additional circuitry, namely that circuitry taught by Heller would obviously be added to that portion of the chip.

Applicant argues that the four-side buttable array is not achievable using the structure defined by claim 1.

In response, Examiner notes that the claim limitations are met by the combination of references presented previously. Examiner notes that it is not necessary for the claimed invention to correlate exactly to the prior art, merely for the prior art to teach the limitations of the claimed invention in order for the rejection to be valid. Examiner notes that the claimed invention defines a three-sided buttable array, wherein a four-sided buttable array teaches the limitation of a three-sided buttable array in addition to another structural limitation, namely having a buttable fourth side. Examiner notes that cited prior art references **may** teach additional limitations not claimed, however the prior art **must** teach all of the claim limitations.

Applicant argues that none of the cited references, either alone or in combination, teach or suggest the invention defined by claims 2, 4-7, 10, 12, 18.

In response, Examiner notes the rejections presented in the previous office action.

Applicant argues that Spivey does not disclose the limitation of claim 3.

In response, Examiner notes that Applicant's admission of fact was used as a primary basis for this rejection, namely that it is very well known to make the edges as small as possible. Applicant's arguments with regards to the limitation of claim 3 and the Spivey reference are piecemeal analysis. Examiner notes that the combination of references teach to move the row logic to the center of the image sensor instead of having it on the edge.

Applicant argues that nowhere do any of the references, either individually, or when combined, teach or suggest that interpolation be conducted on missing pixels caused by both row select logic and spaces between image sensor chips.

In response, Spivey discloses on column 15, lines 30-37 that both dead or weak pixels as well as gaps between sensors are interpolated. Sayag further discloses pixel interpolation for the row logic as discussed in the previous office action.

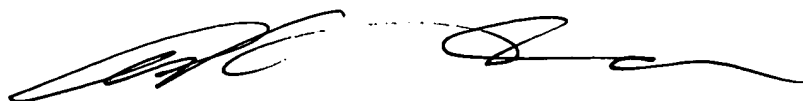
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Thursday 7:30am to 4:30 pm and every other Friday 7:30am to 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 703-308-4357.

Brian C Genco  
Examiner  
Art Unit 2615

January 20, 2004



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